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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/458,998	12/10/1999	NORMAN JAMES MOORE		9562

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EXAMINER	
HINES, JANA A	

ART UNIT	PAPER NUMBER
1645	13

DATE MAILED: 10/11/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/458,998	Applicant(s) MOORE ET AL.	
	Examiner Ja-Na A Hines	Art Unit 1645	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 July 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *10-35* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *10-35* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Amendment Entry

1. The amendments filed April 8, 2002 and May 16, 2002 have been entered. Claims 1-11, 15-27 and 30-35 have been amended. Claims 10-35 are under consideration in this office action.

Drawings

2. The drawing corrections can no longer be held in abeyance. Therefore applicant must submit proposed drawing corrections in response to the requirement in the office action.

Withdrawal of Rejections

3. The rejection of claims 10-35 under 35 U.S.C. 112, first paragraph, is withdrawn in view of applicants' amendments.

Response to Arguments

4. Applicant's arguments filed April 8, 2002 and May 16, 2002 have been fully considered but they are not persuasive.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. The new matter rejection of claims 10-35 under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention is maintained.

The rejection was on the grounds that claims 10-35 are drawn to a method for determining the concentration of at least one species or serogroup of a species of *Legionella* bacteria in a fluid comprising culturing an identified species as a wet cell pellet, obtaining from a wet cell pellet essentially protein free carbohydrate antigen, as recited in the claims. There is no teaching of a wet cell pellet in the specification. In claims 10 and 25, the claims recite separating the mixtures into two layers, and separating the layers, however there is no support in the specification for separating the mixture or removing the upper layer. There is no support for the use of a broad-spectrum protease. There is no support for separating out an essentially protein free carbohydrate antigen as recited in the claims. Moreover, there is no support for obtaining an essentially protein free carbohydrate antigen by a series of substeps now claimed. There appears to be no support in the specification for the hybrid claims drawn to obtaining an essentially protein-free carbohydrate antigen and conducting an assay by contacting liquid sample with a detection agent which essentially comprises labeled purified antigen-specific antibodies. Applicant has not pointed to support in the specification by page and line number. Thus, the amendment introduces new matter.

Applicants argue that the essential element wherein test begin with purified polyclonal antibodies as described in 09/139,720 and provide for the highly sensitive results is not new matter and has been described in the applications.

However, first all essential material must be disclosed in the instant application, and thereby be identified by page and line number. Applicant has failed to do such.

Second, the specification states that the use of raw polyclonal antibodies is an essential element in the performance/ sensitivity of the assay. There is no support in the specification for the use of such purified raw polyclonal antibodies. Thus, the claims encompass new matter by not limiting the claims to the purified raw polyclonal antibody which are an essential element of the claims. Thus the rejection is maintained.

6. The rejection of claims 10-35 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention is maintained.

Applicants argue that they refer to the essentially protein-free carbohydrate antigen embodiment as the entity used in the purification process. This argument is not persuasive.

Claims 10 and 25 are unclear. Claims 10(e)(iv) and 25(e)(iv) disclose correlating an amount of O-carbohydrate antigen detected in the sample, however none of the previous steps recite using the O-carbohydrate antigen. It is unclear how one can correlate such. The other steps within the method fail to recite what specific antigen is being detected.

Furthermore, it is unclear if the antigen-specific antibodies bind only to an essentially protein-free carbohydrate antigen or to the O-carbohydrate antigen as produced in step (d) of claim 10 or step (f)(iv) of claim 25. It should be noted that the antibodies of 09/139,720 are specific to O-carbohydrate antigens of *Legionella*. Clarification in the claims is requested as to what the antibodies are specifically binding.

7. The rejection of claim 21 as being vague and indefinite is maintained.

Applicant argues that the buffer solution is not a critical composition. However, regardless of whether one wishes to declare the buffer solution as critical or not, the solution needs to be adequately described. The claim does not disclose what reagents are encompassed within the buffer solution. There are many buffer solutions known to those in the art. The claims need to recite the particular combination of reagents. There are an infinite number of combinations of possible buffer solutions, thus the claim should be so limited.

8. The rejection of claim 32 is maintained. Despite applicants amendments, the claim recites the use of a test reaction vessel in step (f)(iv) of claim 25, however claim 25 does not recite the use of test reaction vessel in step (f)(iv). Appropriate correction is requested.

9. The rejection of claim 25 under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the

steps is maintained. Despite applicants' amendments, the omitted steps are: There is no contact step in step 25(e)(1) between the antibody coated particles and the carbohydrate antigens. The claim still recites that the antibodies tend to draw to themselves carbohydrate antigen, however this is not a positive recitation step for contact between antibody and antigen. The claim must positively recite a contact step between the antibody and the antigen.

Incorporation By Reference

10. Applicant argues that an incorporation of the essential material would be extremely burdensome and costly to the applicants.

However, the fact remains that the incorporation of essential material in the specification by reference to another patent application is improper.

Applicant is required to amend the disclosure to include the material incorporated by reference. The amendment must be accompanied by an affidavit or declaration executed by the applicant, or a practitioner representing the applicant, stating that the amendatory material consists of the same material incorporated by reference in the referencing application. See *In re Hawkins*, 486 F.2d 569, 179 USPQ 157 (CCPA 1973); *In re Hawkins*, 486 F.2d 579, 179 USPQ 163 (CCPA 1973); and *In re Hawkins*, 486 F.2d 577, 179 USPQ 167 (CCPA 1973). The attempt to incorporate subject matter into this application by reference to 09/139,720 is improper because the incorporation by reference attempts to incorporate essential material.

Moreover, if an applicant fails to set forth an adequate disclosure, the applicant has in effect failed to particularly point out and distinctly claim the invention as required. If one skilled in the art would not be able to identify the material or acts from description in the specification for performing the recited function, as claimed by applicant to be part of the novelty of the instant application, then applicant will be required to amend the specification to include the material incorporated by reference and to clearly link or associate the material or acts to the function recited in the claim.

Therefore, applicants' argument is not persuasive.

Double Patenting

11. The rejection of claims 10-35 of this application because they conflict with claims 69-100 of Application No. 09/139,720 is maintained.

Applicant admits that certain broader claims of 09/139,720 encompass the more specific subject matter claimed in 09/458,998 therefore, applicant is required to either cancel the conflicting claims from all but one application or maintain a clear line of demarcation between the applications. See MPEP § 822.

Claims 10-35 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 69-100 of copending Application No. 09/139,720. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims in 09/458,998 are

drawn to a method of determining the concentration of at least one species or serogroup of *Legionella* bacteria in water comprising the recited steps. While 09/139,720 is drawn to a method of detecting the presence of at least one group or serogroup of *Legionella* bacteria in a fluid sample comprising the same steps as recited 09/458,998. The method of determining the concentration of the Legionella (09/458,998) is inherently encompassed by the detection of the bacteria (09/139,720) when the same method steps are recited. Thus 09/458,998 is not patentably distinct from 09/139,720. Therefore the rejection of provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented is maintained and applicants' intention is acknowledged.

New Grounds for Rejection

12. Claims 10-35 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. This is an enablement rejection.

Claims 10 is drawn to a method for determining the concentration of at least one serogrouop of *Legionella* wherein comprising culturing a bacterial species, obtained from a wet cell pellet essentially protein free carbohydrate antigen, coupling spacer molecules to the essentially protein-free carbohydrate antigen, passing antibodies to produce purified carbohydrate antigen specific antibodies and conducting an assay. The instant specification fails to provide any experiments that show the combination of purifying the *Legionella* carbohydrate antigen and conducting an assay as one method

for determining the concentration of a *Legionella* carbohydrate antigen. Rather the specification teaches, an immunochromatographic test and preparation of a test device in example 1; and an enzyme immunoassay test in examples 2 and 3. The art of purification is highly unpredictable and the instant specification fails to provide any information that the *Legionella* carbohydrate antigens could be purified, detected and their concentration determined in the claimed manner. There is no teaching of a method for determining concentration that encompasses combining the purification and method of determination into one hybrid method. Moreover, there appears to be no conception of a method for determining the concentration of a *Legionella* carbohydrate antigen characteristic of at least one species or serogroup of a species of Legionella bacteria.

There is merely a general outline of purifying carbohydrate antigens referring to an incorrect incorporation by reference of elucidating antibodies that bind. There is no teaching of a wet cell pellet in the specification; separating the mixtures into two layers, and separating the layers; or removing the upper layer or how to achieve such. There is no teaching in the specification for using a broad-spectrum protease. There is no support for separating out an essentially protein free carbohydrate antigen. Moreover, there is no support for obtaining an essentially protein free carbohydrate antigen by a series of substeps now claimed. There appears to be no support in the specification for obtaining an essentially protein-free carbohydrate antigen in the manner now claimed. Furthermore, the claims are not enabled for conducting an assay by contacting liquid

sample with a detection agent which essentially comprises labeled purified antigen-specific antibodies.

In order to achieve the functional limitation of an essentially protein-free carbohydrate antigen and purified antigen specific antibodies, the disclosure needs to teach purification procedures specific to individual species of gram-negative bacteria. The disclosure does not teach how to achieve the instantly claimed property or assurance of particular results which would be obtained if certain direction were pursued (Critical Synergy: The Biotechnology Industry and Intellectual Property Protection, Presentation of the intellectual Property Committee of the Biotechnology Industry Organization at the October 17, 1994, Hearing of the U.S. Patent and trademark Office, San Diego, CA, published by the Biotechnology Industry Organization, Washington, D.C. pages 100-107). Producing an essentially protein free carbohydrate bacterial antigen is a highly empirical process yet the specification fails to teach the critical or key characteristics of the bacterial carbohydrate antigens; moreover, the specification needs to teach the particular combination of reagents. There are an infinite number of combinations of possible columns, gradients, gels, centrifugations, in combination with appropriate buffers of varying pH, salt, etc., however, the specification is not enabled for obtaining from the wet cell pellet an essentially protein-free carbohydrate antigen from *Legionella* bacteria by a series of substeps, thus the claim should be so limited. In absence of further guidance from applicants as to how to purify the antigens to a degree which is an essentially protein-free carbohydrate antigen, and in view of the unpredictability and complexity in the art, it would require undue

experimentation on the part of a skilled artisan to discover the key and critical characteristics of the *Legionella* bacteria which allow one skilled in the art to achieve an essentially protein-free carbohydrate antigen.

The claims are further drawn to conducting an assay which comprises detecting crude carbohydrate antigen of a species of bacteria by contacting the liquid sample with a detection agent which essentially comprises labeled purified antigen-specific antibodies, however the 09/139,720 specification recites, Immunoassay procedures that require adding "reagent A", TWEEN 20 ^{TM}, sodium azide, sodium dodecydl sulfate in sodium citrate phosphate buffer to produce the crude carbohydrate antigen, however the instant claims fail to recite adding the appropriate reagents. Moreover, the specification does not appear to enable the use of the Legionella bacteria with other reagents since "reagent A" solution (tris base containing SB3-8, a zwitterionic detergent) is recited by the specification. See 09/458,998 page 9. Thus, it is unclear that one of skill in the art could follow these general guidelines and achieve purification of an essentially protein-free carbohydrate antigen.

The instant claims are not limited to the purified raw polyclonal antibodies. The specification of 09/458,998 on page 4 at line 10-12 states that applicants' have developed a modified enzyme immunoassay (EIA) using a coated tube in which *L. pneumophila* serogroup 1 raw polyclonal antibodies have been purified according to the affinity purification procedure described and claimed in the parent application. See also page 5 paragraph 1 of the 09/458,998 specification. Therefore, the purified raw polyclonal antibodies and procedures disclosed in both 09/139,720 and 09/458,998

specifications are what are being used in the instant application when referring to *Legionella*. Therefore, the claims of the instant application need to recite the same purified raw polyclonal antibodies as described in the specifications. *Legionella* antibodies. Thus purified raw polyclonal antibodies recognizing the O-carbohydrate antigen of *Legionella* will bind and detect the presence of *Legionella*. However, the claims of the instant application do not recite the essential use of the purified raw polyclonal antibodies. Therefore, the claims do not include the limitations taught by the parent specification, thus they are not enabled.

Absent clear demonstration of the detection of a *Legionella* bacterial carbohydrate antigen, the purification and determination methods could not be used in any well-established manner. In absence of further guidance from applicants, the skilled artisan would have to discover what the appropriate substrate is and the conditions under which the bacteria could be extracted. Such experimentation requires ingenuity beyond that expected of one of ordinary skill in the art. Such need for non-routine experimentation demonstrates the specification is not enabled for the asserted use or well-established use for detection of bacterial carbohydrate antigens. Accordingly, the specification is not enabled for using the alleged method in any manner disclosed.

13. Claims 10-35 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the

application was filed, had possession of the claimed invention. This is a new matter rejection.

14. Claims 10-35 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The terms "sufficiently sensitive" "strong acid" " approximate neutrality" " broad spectrum protease enzyme" "weak base" and "essentially protein free" in the claims are relative terms which render the claim indefinite. The terms are not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably appraised of the scope of the invention.

15. Claims 10 and 25 are unclear. Step (d) of the claims is unclear because it recites passing antibodies over the chromatographic affinity gel to produce purified carbohydrate specific antibodies, however it is unclear from where the antibodies came. There is no recitation by the claim as to making the antibodies, thus the antibodies must be obtained before they are passed through the column. Clarification is requested.

In steps (d) and/or (e) the claims recite the limitation "purified antigen-specific antibodies", however there is insufficient antecedent basis for this limitation in the claim. The claim should recite purified carbohydrate antigen-specific antibodies.

Double Patenting

16. Claims 10-14 and 25-29 of this application conflict with claims 22-32, 34-40, and 43-51 of Application No. 09/518,165. 37 CFR 1.78(b) provides that when two or more applications filed by the same applicant contain conflicting claims, elimination of such claims from all but one application may be required in the absence of good and sufficient reason for their retention during pendency in more than one application. Applicant is required to either cancel the conflicting claims from all but one application or maintain a clear line of demarcation between the applications. See MPEP § 822.

17. Claims 10-14 and 25-29 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 22-23, and 25 of copending Application No. 09/518,165. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims in 09/458,998 are drawn to a method of determining the concentration of *Legionella* bacteria in a fluid/water sample comprising: culturing a *Legionella* species, obtaining from a wet cell pellet essentially protein free carbohydrate antigen, coupling a spacer molecules to the essentially protein-free carbohydrate antigen, passing antibodies and conducting an assay. While 09/518,165 is drawn to a method of detecting the presence of at least one group or serogroup of bacteria in a fluid sample comprising the same steps as recited 09/458,998. The method of determining the concentration of the *Legionella* in application of 09/458,998 is inherently encompassed by the detection of

the bacteria 09/518,165 when the same method steps are recited. Therefore 09/458,998 is not patentably distinct from 09/518,165.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ja-Na Hines whose telephone number is (703) 305-0487. The examiner can normally be reached on Monday through Thursday from 6:30am to 4:00pm. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynette Smith, can be reached on (703) 308-3909. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-4242.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0196.

Ja-Na Hines

October 3, 2002

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